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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,132	05/04/2001	Dai-Liang Ting	JCLA5873	1182

7590 08/18/2003

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EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT	PAPER NUMBER
	2871

DATE MAILED: 08/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/849,132	TING ET AL.
	Examiner Prasad R Akkapeddi	Art Unit 2871

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM

A SHORTENED STATUTORY PERIOD FOR REPLY
THE MAILING DATE OF THIS COMMUNICATION.

THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 02 June 2003 .

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-12 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 04 May 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. ____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____ .
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . 6) Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group A, claims 1-12, in Paper No. 4 is acknowledged.
2. Claims 13-24 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 2-12 recites the limitation "reflector" in claims 1. There is insufficient antecedent basis for this limitation in the claim.
5. Claims 2-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims 2-12 recite a "reflector" of claim 1. However, claim 1 has two reflective surfaces i.e., (a) diffusion symmetric slant reflectors and (b) a reflection layer. Hence, the Examiner is confused as to which of the above two reflective surfaces the Applicant is referring to in claims 2-12. The problem is compounded by the fact that the claim 1 does not explicitly recite a 'reflector' as mentioned in the paragraph 4 above, due to the lack of antecedent basis.

Further Examination of the application is based on the assumption that the 'reflector' as recited in claims 2-12 is the 'reflective layer' of claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (Hayashi) (U.S. Patent No. 6,166,793).

As to claims 1-3: Hayashi discloses a reflective liquid crystal display having a substrate with pixels, a plurality of diffusion symmetric slant reflectors on the pixel (Fig. 3), (col. 4, lines 54-55), wherein the diffusion-symmetric slant reflectors have a gradual decrease height from a central point to the periphery (Fig. 3). Hayashi also discloses a reflection layer (col. 5, lines 59-64), as recited in claim 1. Hayashi discloses symmetrical slant surfaces and a plurality of bumps on the slant surfaces (Fig. 4), as recited in claim 2, and the angle between the slant surface and the substrate is 2.5 degrees or more (col. 3, lines 57-59), as recited in claim 3.

Though Hayashi discloses a reflection layer, but it is located on the substrate and not on the diffusion symmetric slant reflectors. However, Hayashi teaches that the slant reflectors reflect light and thus it has reflective properties.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt a reflective layer on the diffusion symmetric slant reflectors also to exhibit bright image and excellent visibility of the images even when the images are viewed from an angle wherein reflection of external light is avoided (col. 2, lines 7-9).

5. Claims 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (Hayashi) (U.S. Patent No. 6,166,793).

Hayashi discloses several geometries on the surface of the reflector having depressions with cone shapes, triangular shapes, rectangular shapes, pyramidal shapes, prismatic shapes etc., (Fig. 3-5) and (cols. 3-4 and elsewhere) and alignment of the reflectors in a single direction is shown in Fig. 2 and different direction is shown in Figs. 3-5, as recited in claims 4-9. The diffusion layer on the reflector is made from resin binder (col. 6, lines 37-59), as recited in claim 10. The reflection layer is a metal having high reflectance such as aluminum and silver (col. 5, lines 62-63), as recited in claims 11-12.

Though Hayashi discloses a reflection layer, but it is located on the substrate and not on the diffusion symmetric slant reflectors. However, Hayashi teaches that the slant reflectors reflect light and thus it has reflective properties.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt a reflective layer on the diffusion symmetric slant reflectors also to exhibit bright image and excellent visibility of

the images even when the images are viewed from an angle wherein reflection of external light is avoided (col. 2, lines 7-9).

In addition Hayashi does not teach the specific projections of these slant surfaces onto the substrate and such projections taking a definite shape when projected. However, any slant surfaces having a definite geometric shapes when projected to a flat surface takes the shapes as identified.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include such projections due to simple geometrical nature of different shapes.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: (a) Molsen (U.S.Patent No. 6,573,959), (b) Kuo (U.S.Patent No. 6,144,430), (C) Blonder (U.S.Patent No. 5,128,787) and (d) Nishio et al. (U.S.Patent No. 5,914,825).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

R&A

August 9, 2003

AP
T. Chowdhury
T. Chowdhury
Primary Examiner